IN THE CLAIMS

Please amend the claims as follows:

1. (Previously Presented) A magnetic signature minesweeping device comprising:
a superconducting material magnet;
a power supply connection to supply a driving current for the superconducting material magnet;
a control unit to control a magnetic output of the superconducting magnet; and
a heading sensor located in the magnetic signature minesweeping device, the heading sensor in communication with the control unit to monitor a magnetic heading of the device, the control unit further to control the magnetic output of the superconducting material magnet responsive to the magnetic heading, and to cause different magnetic outputs to be provided for different magnetic headings.

2. (Canceled).

3. (Previously Presented) A device as claimed in claim 1 wherein the minesweeping device comprises a water driven turbine power generator to supply the driving current through said power supply connection and a plurality of sensor units arranged to monitor the magnetic output of the superconducting magnet and the power output of the turbine power generator, and further comprises a feedback arrangement to supply feedback signals from the sensor units to the control unit, wherein the magnetic output and power output can be optimised for a specific mine countermeasure task.

4. (Previously Presented) A device as claimed in claim 3, wherein the turbine power generator comprises adjustable pitch blades, whereby drag characteristics of the turbine power generator are adjustable.

5. (Previously Presented) A device as claimed in claim 1, wherein the superconducting material magnet is disposed as a three-axis magnetic source.

6. (Previously Presented) A device as claimed in claim 1, wherein the minesweeping device further comprises a communications unit arranged to enable remote access to the control unit.

7. (Previously Presented) A device as claimed in claim 6, wherein the communications unit is selected from a group comprising acoustic, radio, induction and cable format communication devices.

8. (Previously Presented) A device as claimed in claim 1, wherein the superconducting material magnet comprises a high T_C superconductor.

9. (Original) A device as claimed in claim 8, wherein the superconducting material magnet is operable at liquid nitrogen temperatures.

10. (Currently Amended) A device as claimed in claim 8 wherein the superconducting material magnet is selected ~~form~~ from a group of materials including multi-filamentary composite wire BSCCO-2223 ($Bi_2Sr_2Ca_2Cu_3O_{10+\delta}$) and a coated conductive composite incorporating YBCO($YBa_2Cu_3O_{7-\delta}$).

11. (Previously Presented) A device as claimed in claim 1, wherein the superconducting material magnet is arranged such that it exhibits a permanent magnetic output component and a variable magnetic output component to represent permanent and induced components of a vessel's magnetic signature.

12. (Previously Presented) A device as claimed in claim 1, wherein the control unit is arranged such that the magnetic output is variable as a function of time and/or position, to facilitate the generation of desired magnetic signatures to emulate vessels, the device including at least one position sensor to which the control unit is responsive.

13. (Previously Presented) A device as claimed in claim 1, wherein the device is a magnetic

signature device operable in target emulation mode (TEM), wherein it emulates the magnetic signature of a particular vessel.

14. (Previously Presented) A device as claimed in claim 1 wherein the device is operable in mine setting mode (MSM), and is configured to produce a magnetic signature associated with a particular type of mine to trigger said mine.

15. (Previously Presented) A minesweeping system, the system comprising:

a plurality of magnetic signature minesweeping devices, arranged in an array, each of the plurality of magnetic signature minesweeping devices having an interface unit to interface at least one of the plurality of magnetic signature minesweeping devices to at least one adjacent minesweeping device in the array, at least one of the plurality of magnetic signature minesweeping devices to receive current input and the interface unit comprises an electrical output for power take-off to the at least one adjacent minesweeping device in the array, the plurality of magnetic signature minesweeping devices further including:

a superconducting material magnet;

a power supply connection to supply a driving current for the superconducting material magnet;

a control unit to control a magnetic output of the superconducting magnet; and

a heading sensor in communication with the control unit to monitor a magnetic heading of the device, the control unit being further arranged to control the magnetic output of the superconducting material magnet responsive to the magnetic heading, and to cause different magnetic outputs to be provided for different magnetic headings.

16. (Previously Presented) A plurality of magnetic signature minesweeping devices as claimed in claim 15, wherein the interface unit is arranged such that the power take-off is facilitated, via a tow and power cable connection between each of the plurality of magnetic signature minesweeping devices.

17. (Canceled).

18. (Previously Presented) A plurality of devices as claimed in claim 15, wherein the interface unit further comprises a control interface, whereby the control unit of the one of the plurality of magnetic signature minesweeping devices is capable of controlling the magnetic output of another one of the plurality of minesweeping devices.

19. (Previously Presented) A device as claimed in claim 1, including a power supply connected to the power supply connection, wherein the power supply and the superconducting material magnet are implemented as separate elements arranged to be connected via a tow and power cable.

20. (Previously Presented) A method of magnetic signature minesweeping comprising:
towing a minesweeping device through water;
supplying a driving current to a superconducting material magnet in the minesweeping device when the minesweeping device is towed through the water; and
utilizing a heading sensor located within the minesweeping device to monitor the magnetic heading of the minesweeping device and control a magnetic output of the superconducting magnet to provide different magnetic outputs for different headings.

21. (Previously Presented) A method as claimed in claim 20, wherein the minesweeping device comprises a turbine power generator to provide a power output comprising said driving current for the superconducting magnet, and wherein the method comprises controlling the power output of the turbine power generator to thereby control the magnetic output of the superconducting magnet.

22. (Previously Presented) A method as claimed in claim 21, wherein the method further comprises monitoring both the magnetic output of the superconducting magnet and the power output of the turbine power generator, and supplying feedback signals for the

controlling of the magnetic output and the power output, whereby the magnetic output and power output can be optimised for a specific mine countermeasure task.

23. (Previously Presented) A method as claimed in claim 21, wherein the turbine power generator comprises adjustable pitch blades, whereby drag characteristics of the turbine power generator are adjustable.

24. (Previously Presented) A method as claimed in claim 20, wherein the superconducting material magnet is disposed as a three-axis magnetic source.

25. (Previously Presented) A method as claimed in claim 20 including arranging the superconducting material magnet such that it exhibits a permanent magnetic output component and a variable magnetic output component to represent permanent and induced components of a vessel's magnetic signature.

26. (Previously Presented) A method as claimed in claim 20, wherein the method further comprises varying the magnetic output as a function of time and/or position, to facilitate generating desired magnetic signatures for simulating vessels.

27. (Previously Presented) A method of magnetic signature minesweeping using a plurality of minesweeping devices that each includes a superconducting material magnet, the method comprising:

supplying a driving current for the superconducting material magnets;

utilizing a heading sensor located within the minesweeping device to monitor an overall magnetic heading of the plurality of minesweeping devices;

controlling a magnetic output of the superconducting magnets to automatically provide different magnetic outputs for different headings; and

interfacing the minesweeping devices, wherein the interfacing comprises an electrical output for power take-off from a first of the plurality of minesweeping devices to another of the plurality of minesweeping devices so as to provide the driving current for the superconducting material magnet of the other minesweeping device.

28.-29. (Canceled).

30. (Previously Presented) A magnetic signature minesweeping arrangement comprising:

an array of minesweeping devices configured to be towed in a serial array, each of the minesweeping devices including a superconducting material magnet;

at least one of the minesweeping devices including a water driven turbine power generator arranged to power a plurality of the minesweeping devices;

a controller to control an overall direction of a magnetic output from the superconducting material magnet of each minesweeping device in response to a determination of a magnetic heading of the magnetic signature minesweeping arrangement; and

a heading sensor located in the magnetic signature minesweeping device, the heading sensor in communication with the control unit to monitor the magnetic heading of the device.

31. - 33. (Canceled)

34. (Previously Presented) A device as claimed in claim 1, comprising a water driven turbine power generator that supplies the driving current when the minesweeping device is towed

through water.

35. (Previously Presented) A method as claimed in claim 24, further comprising a power supply, the power supply being a water driven turbine power generator to supply the driving current when the minesweeping device is towed through water.

36. (Previously Presented) A method as claimed in claim 27, further comprising a power supply, the power supply being a water driven turbine power generator to supply the driving current when the minesweeping device is towed through water.

37. (Previously Presented) A device as claimed in claim 11, wherein the permanent magnetic output component comprises a non-zero permanent vertical magnetisation.

38. (Previously Presented) A device as claimed in claim 37, wherein the control unit is configured to receive a latitude and controls the permanent vertical magnetisation responsive to the received latitude, causing different permanent vertical magnetisations to be provided for different latitudes.

39. (Previously Presented) A device as claimed in claim 11, wherein the permanent magnetic output component comprises non-zero permanent longitudinal and across-ship magnetisations.

40. (Previously Presented) A device as claimed in claim 39, wherein the control unit controls the permanent across-ship magnetisation and the permanent longitudinal magnetisation responsive to the magnetic heading, causing different permanent across-ship magnetisations and different permanent longitudinal magnetisations to be provided for different magnetic headings.

41. (Canceled)